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EXAMINER	
THAKUR, VIREN A	

ART UNIT	PAPER NUMBER
1794	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/681,649	NEHLS ET AL.	
	Examiner	Art Unit	
	VIREN THAKUR	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 July 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) *17-27* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16 and 28-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. As a result of the amendment to the claims, which further specifies the particulars of the channel through which the steam is directed and also further specifies the length of the food product and that of the steam sleeve, the following rejections have been withdrawn: 1-2,,11,15-16 and 28-31 under 35 U.S.C. 102(b) as being anticipated by Wilson et al. (US 5711981); claim 1 under 35 U.S.C. 102(b) as being anticipated by Mauer (US 5741536); claims 1, 8, 9, 28 and 29 under 35 U.S.C. 102(b) as being anticipated by Morris, Jr. (US 5439694).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1, 8-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morris, Jr (US 5439694) in view of Wallace (US 3620766), Peebles (US 3052559) and Stark (US 4782643).

Regarding claim 1, it is noted that the claims do not even recite wherein the product is sterilized but rather only "treat" the surface of the food product.

In any case, Morris Jr. discloses treating the outer surface of the food product by placing a food product having an outer surface on an advancement mechanism, providing a steam sleeve for generating a flow of steam to treat the outer surface of the food product and passing the food product in a feed direction through the steam sleeve using the advancement mechanism (See Figure 1). The food product enters the steam sleeve through rubber doors (figure 1, item 34) and steam contacts all the exposed surfaces of the food product (Column 3, lines 21). The steam is continuous unless it results in over heating of the food. In order to prevent this, Morris Jr., disclose using sensors and an electronic solenoid valve to cut off steam whenever the conveyor line stops (Column 3, lines 19-27). Morris, Jr also teaches direct contact of the food product with the steam. Regarding the new limitation of the steam sleeve having an interior wall, the sleeve of Morris, Jr. inherently includes an interior wall, and also has an entrance and exit that define the length of the steam sleeve.

Claim 1 differs from Morris, Jr. in the new limitations of the particular length of the food product and wherein the food product simultaneously extends beyond both the entrance and exit during at least part of the step of passing the food product through the steam sleeve.

Wallace teaches that it has been conventional in the art to process meats wherein a continuous length of meat passes through multiple treatments, such that the length of the food product simultaneously would block both the entrance and exit of a treatment section of the process (See figure 1). In addition, Peebles has been relied on as further evidence of the continuous movement of a food product through a sleeve that applies steam to the food product (figure 1, section 18). Stark similarly teaches in figure 1, item 12 and figure 5, item 50) treatment of a continuous food product wherein the product blocks both the entrance and exit of the treatment zone. Since the art taken as a whole teaches that it was conventional to continuously treat the outer surface of a food product such that the food product blocks both the entrance and exit of the treatment zone, the particular food product treated with steam, and the particular length of the food product treated would have been an obvious matter of choice and/or design to one having ordinary skill in the art at the time the invention was made.

Regarding claim 8, Morris Jr. discloses a seal, using rubber doors (Figure 1, Item 34) to form a seal between the outer surface of the food product and at least one of the entrance and exit of the steam sleeve using a generally flexible wiper element. Since the rubber doors are flexible, they seal the chamber and would also act as a wiper element against the surface of the food product.

Regarding claim 9, Morris Jr. discloses continuous advancement of the food product since the food product is fed into the steam sleeve. The steam generation is only stopped whenever the conveyor is stopped, for the purpose of preventing overheating of the food product (Column 3, lines 19-27).

Regarding claim 11, it is noted that the advancement mechanism taught by Morris Jr. would inherently have been advanced at a predetermined rate. Furthermore, although Morris Jr. does not specify in depth the sterilization parameters, the particular temperature for the treatment would have been dependent on the type of food to be sterilized and the requisite temperature that results in efficient sterilization. Furthermore, the particular depth of the food product would also have been dependent on the particular type of processing after sterilization. In view of this knowledge by the ordinarily skilled artisan, the particular fluid properties to achieve a desired surface temperature and the particular depth of the food would have been an obvious matter of choice and/or design routinely determinable by experimentation for the purpose of achieving the desired sterilization and properties of the food product.

5. Claims 2, 28-29 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claims 1, 8-9 and 11, above, and in further view of Moreland (US 3005716).

Regarding claims 2 and 28, Morris Jr. teaches injecting steam into the steam sleeve from an inlet (36) and removing condensate from an outlet (32).

Claims 2 and 28 differ from the combination in specifically reciting wherein the circulating of the flow of steam in the steam sleeve occurs within an inwardly open channel formed in the interior wall of the sleeve, with the channel having an inlet for introduction of the steam into the sleeve and an outlet for removal of the steam and condensate from the sleeve.

Moreland has been relied on to teach that the structure of an inwardly open channel (figure 3, item 43) through which a treatment fluid passes (column 2, lines 53-59) for the purpose of treating the surface of the article that comes into contact with the treatment fluid, has been a conventional structure for fluid treatment. Clearly, Figure 3 of Moreland also teaches an inlet and outlet (44 and 45). Therefore, Moreland teaches that open channel structures having an inlet and outlet have been conventional structures for the purpose of passing a treatment fluid there-through that contacts every surface of the article to be treated. To therefore modify the structure of the combination and employ the open channel structure as taught by Moreland would therefore have been obvious to one having ordinary skill in the art, for the purpose of ensuring that the treatment medium taught by the combination would come into complete contact with the food product that is passed there-through. It is noted that Moreland is analogous art because Moreland is concerned with treating the surface of an article with a treatment medium while the article is moving through a sleeve, which is applicants' problem as well.

It is noted that claim 29 does not recite simultaneous blocking of both the entrance and exit of the steam sleeve. Regarding claim 29, the steam is continuous as discussed above with respect to Morris, Jr., and as shown in the figure, the food product at least partially blocks the entrance and the exit during the step of generating the flow of steam in the steam sleeve.

Claim 32 is rejected for the reasons given above in claim 1, with respect to the references to Wallace, Peebles and Stark and the simultaneous blocking of both the entrance and exit.

6. Claims 3-7,10, 12-16, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claim 2, 28-29 and 32, above and in further view of Wilson (US 5711981), Cronin (US 2919639), Gressly (US 2682827) and Abrams (US 2909985).

Regarding claims 3, 30 and 31, the combination as discussed above teaches employing channels that are generally circular and aligned perpendicular relative to a longitudinal axis of the food product and circulating the flow of steam in the steam sleeve within a channel. It is further noted that Moreland already teaches the helical channels into which are passed a treatment fluid. The treatment fluid would inherently have been passed through the channels of Moreland in a circular flow.

However, the claims differ in reciting introducing the steam into the entrance of the channel with a tangential velocity effective to generate a circular flow directing at least some of the steam condensation away from the outer surface of the food product.

Firstly, it is noted that Morris, Jr. teaches removing the condensate through an outlet (32). Wilson et al. strive to ensure that moisture does not remain on the food product, since it is taught that excess moisture would absorb the heat energy that performs the pasteurization (column 7, lines 46-50, for instance). As can be seen from figure 9a, Wilson et al. further teach encircling of the steam around the food product for

the purpose of uniform steam treatment. This provides motivation for the particular pathway of the steam around the food product. In any case, the art has thus recognized that residence of moisture on the food product results in the transfer of heat away from the food and thus lowering the pasteurization temperature while also uniformly treating every surface of the food product. Cronin has similarly been relied on to teach rotating the food product, instead of the treatment medium, for the similar purpose of preventing residence of the treatment solution on the food (Column 4, lines 46-52). Gressly discloses an apparatus for sterilizing foodstuffs and beverages wherein high pressure steam is injected into the sterilizing chamber through multiple inlets. The multiple inlets are angled so as to form a helical passage of steam within said chamber (Column 3, Lines 22-52). By allowing the high pressure steam to form several helical passages, the turbulence within the sterilizing chamber is increased, which thus allows for uniform heating of all particles (Column 4, Lines 24-29). Abrams similarly teaches that a tangential injection of steam for rapid and uniform sterilization (column 4, lines 8-34).

In view of the art taken as whole, it has been conventional in the art to introduce steam with a tangential velocity that further takes a helical path for the purpose of uniformly and rapidly sterilizing all surfaces of the food product. Moreland already teaches helical channels for introduction of a treatment fluid. Wilson et al., Cronin, Gressly and Abrams have been relied on to teach injecting steam in a helical pattern for encircling the food product and with a tangential velocity for the purpose of uniform and rapid sterilization. In addition, one having ordinary skill in the art would have recognized that high pressure steam that creates turbulence would have aided in preventing

contact of steam condensate with the food product: the helical path of the steam creates centrifugal forces that would drive heavier contents outwardly (radially) and the turbulence would have aided in removing any condensate that did come into contact with the foodstuff. Based on these teachings to modify the combination and provide a helical channel for heat treating a food would have been obvious to one having ordinary skill in the art at the time of the invention, for the purpose of imparting uniform surface treatment of the food product.

Regarding claims 4, 30 and 31, the art taken as a whole teaches a helical channels, as evidenced by Moreland, which thus would have circulated the flow of steam multiple times around the food product.

Regarding instant claim 5, Morris, Jr teaches a flow of steam having a general direction opposite to that of the feed direction. In this case, the steam is injected from above, while the food is processed horizontally. In view of the breadth of the term "general direction opposite" Morris Jr., teaches a general direction opposite to that of the feed direction, but is silent in teaching a helical channel. In light of the teachings of Moreland, the particular path of the treating medium, such as a helical path would not have provided a patentable feature over the prior art.

Regarding claim 6 which recites including more than one set of helical channels, each having their own inlet and outlet, it is noted that once it was recognized in the art to employ helical channels, as taught by Moreland, to provide more than one set of helical channels, each with their own inlet and outlet would have been an obvious

duplication of structures already employed for exposing the surface of a product to a treatment medium.

Regarding instant claim 7 which recites the flow of the steam in a general direction opposite to that of the feed direction and the positioning of the helical channels so that the flow of steam is in the same general direction as that of the feed direction (Column 3, Lines 46-52), for the purpose of uniformly heating the food product. Wilson et al. also teach uniform and complete sterilization of the food product therein by using a positive pressure chamber (Column 6, Lines 54-57). As shown by figure 9a of Wilson et al., the direction of flow of the steam is in "a direction general direction opposite to that of the feed direction," and is essentially encircling the food product. Given these teachings, it would have been obvious to one having ordinary skill in the art at the time the invention was made to flow the steam in both the same and opposite direction to that of the feed direction for the purpose of ensuring uniform heating.

Regarding instant claim 10, Gressly teaches multiple inlets. Therefore given the teachings of Gressly, as discussed above, each inlet would have created a helical path for the steam. Also, as discussed above, Wilson et al. disclose multiple inlets and outlets for the channels that flow steam. Therefore it would have been obvious to one having ordinary skill in the art to modify Wilson et al. to use multiple inlets so as to create multiple helical paths, as taught by Gressly for the purpose of ensuring uniform heating of the foodstuff. Additionally, one having ordinary skill in the art would have recognized that high pressure steam that creates turbulence would have aided in preventing contact of steam condensate with the food product: the helical path of the

steam creates centrifugal forces that would drive heavier contents outwardly (radially) and the turbulence would have aided in removing any condensate that did come into contact with the foodstuff.

Regarding claim 12, Morris Jr is silent in teaching wherein the step of passing the food product through a steam sleeve occurs immediately prior to the slicing station. However; Wilson et al. disclose wherein the step of cutting can occur immediately after the entire meat pasteurization process has been completed. Since the process of sterilizing the meat product occurs at such high temperatures, Wilson et al. teach wherein coolant is sprayed onto the surface of the meat so as to prevent the meat from being cooked at its surface (Column 10, Lines 20-22). Nevertheless, immediately after the prevention of surface cooking, said meat product could be further processed by cutting, or any other process such as packaging or freezing. Given these teachings, it would have been obvious to one having ordinary skill in the art to modify the combination and cut, package, freeze, or perform any other processing step after the pasteurization process had been completed. Therefore, providing a slicing station would not have provided a patentable feature over the prior art.

Regarding claims 13 and 14, it is noted that Morris Jr. teaches flexible rubber doors that close the entrance and exit of the steam sleeve. The claim differs from the combination in specifically reciting wherein the sealing gates are selectively shiftable between a sealing position and an unsealing position allowing access to the exit opening. It is noted that Wilson et al. teach selectively openable and closable gates, for applicants' purpose of sealing the steam sleeve prior to entrance and exit of the food

product (Column 9, Lines 25-30 and Lines 59-61; Column 10, Lines 12-17). Wilson et al. use these sealing gates for the purpose of maintaining a particular steam environment within the sleeve. To therefore modify the combination and employ sealing gates, as taught by Wilson et al., would have been obvious to one having ordinary skill in the art, for the purpose of maintaining a particular steam environment for the purpose of treating the food product contained within the sleeve.

Regarding claim 15, Morris Jr. is silent in retracting the advancement mechanism from a trailing face of the food product while the trailing face of the food product is positioned within the steam sleeve for a period of time sufficient to provide steam treatment to the training face of the food product prior to advancement of the food product through the exit opening of the steam sleeve.

It is noted however, that the claim is not specific as to what can be considered the advancement mechanism and what is considered a trailing face of the food product. The claim does not provide a frame of reference with respect to the sleeve, for instance, for what is considered that trailing face. In any case, Moreland, for instance, teaches a pushing device (figures 3 and 4, item 22) which both extends and retracts when a particular amount of the food product is placed into the treatment zone. Additionally, in light of the broad interpretation of the term "trailing face," Wilson et al. teach retracting the advancement mechanism away from a trailing face of the food product while the trailing face of the food product is positioned within the steam sleeve for a predetermined period of time. Since the advancement mechanism of Wilson et al. can be continuous or batch (or semi-batch) the advancement mechanism is always moving

away from a trailing face of the food. Thus, the advancement mechanism is retracted from the trailing face of the food. The exit to the steam chamber is only opened after complete steaming (Column 9, Lines 25-30), therefore the trailing face of the food product is also sufficiently steamed.

Regarding claim 16, Wilson et al. disclose a cooling operation immediately prior to advancing the food product into a steam sleeve (Column 8, Lines 23-37). By removing the water using air, it is interpreted that Wilson et al. disclose cooling the food product. In evaporating the water or allowing the water to drip from the food product, it is known that heat energy is withdrawn from the surface of the food product, thus cooling said product. To therefore modify the combination and cool the product after steam treatment would have been obvious for its art recognized and applicants' intended function.

7. Claims 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Wilson et al. (US 5711981) in view of Moreland (US 3005716).

Regarding claim 28, Wilson et al. teaches a method of treating an outer surface of a food product comprising, placing a food product having an outer surface on an advancement mechanism (Figure 2, Item 25); providing a steam sleeve (Figure 3, Item 14) for generating a flow of steam having selected properties to treat the outer surface of the food product, the steam sleeve having an entrance (Figure 1, Item 30; Column 9, Lines 25-30) and an exit (Figure 1, Item 38; Column 9, Lines 25-30); passing the food product in a feed direction (Figure 1, See arrows near Item M) through the steam sleeve

using the advancement mechanism (Column 5, Lines 53-64); and generating the flow of steam in the steam sleeve while the food product is passing therethrough, the flow of steam contacting the outer surface of the food product for treatment of the outer surface of the food product (Column 6, Line 42 to Column 7, Line 27). Regarding the new limitation of the steam sleeve having an interior wall, it is noted that the sleeve of Wilson et al., has an interior wall. The steam sleeve length is defined by the distance between the entrance (30) and exit (38) doors. Wilson et al. uses an advancement mechanism (figure 5, item 125) and generates a flow of steam in the steam sleeve and circulates the flow of steam in the steam sleeve within a channel (Figure 9A).

The claim differs from Wilson et al. in the particular structure of the channel. Specifically, the claim includes the new limitations of the channel formed in the interior wall of the sleeve, the channel having an inlet for introduction of the steam into the sleeve and an outlet for removal of the steam and condensate from the sleeve, the channel inwardly open to an interior of the sleeve while the food product is passing there through.

Moreland has been relied on to teach that the structure of an inwardly open channel (figure 3, item 43) through which a treatment fluid passes (column 2, lines 53-59) for the purpose of treating the surface of an article with the treatment fluid. Clearly, Figure 3 of Moreland also teaches an inlet and outlet (44 and 45). Therefore, Moreland teaches that open channel structures including an inlet and outlet has been a conventional structure for the purpose of passing a treatment fluid there-through that contacts every surface of an article that one chooses to treat while passing said article

through the sleeve. In view of Figure 9a of Wilson et al. which teaches encircling the food product with steam, to modify the structure of Wilson et al. and employ the open channel structure as taught by Moreland which would also have resulted in encircling of the product with a treatment fluid, would therefore have been obvious to one having ordinary skill in the art, for the purpose of ensuring that the treatment medium taught by Wilson et al. would come into complete contact with the food product passed there-through.

Regarding claim 29, the limitation "at least partially blocking" is broad. By being inside the steam sleeve during sterilization, for instance, the food product would at least partially block the entrance to the steam sleeve. This would be similar to someone standing inside of a door, but still blocking the door so as to prevent someone else from walking in. Further regarding claims 28 and 29, it is noted that Wilson et al. also disclose that the chamber at least partially receives the food (Column 4, lines 2-3). This discloses that the meat is not necessarily enclosed within the chamber and therefore the meat would partially block the entrance and exit during the process of conveying the meat through the steam chamber.

Regarding claim 30, it is noted that Wilson et al., teach circulating the steam (column 4, lines 50-51). Wilson et al. also show multiple ports for entrance of steam, as shown in figure 5, item 136 as the downwardly extending channels. Since Wilson et al. is circulating the steam and has multiple channels, Wilson et al., would circulate the steam around the perimeter of the product multiple times. It is further noted that since Wilson et al. is circulating the steam, that the application of the steam between the inlet

and outlet of the channel would also inherently occur multiple times, since this is the basis for circulating steam or any gas. By circulating, the steam would continuously flow around the perimeter of the product between the inlet and outlet.

Regarding claim 31, the combination teaches circulating the flow of steam in a plurality of channels inwardly open to an interior of the sleeve.

Response to Arguments

8. Applicant's arguments with respect to claims 1-16 and 28-31 have been considered but are moot in view of the new ground(s) of rejection necessitated by the amendment to the claims.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VIREN THAKUR whose telephone number is (571)272-

6694. The examiner can normally be reached on Monday through Friday from 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571)272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Steve Weinstein/
Primary Examiner, Art Unit 1794

/V. T./
Examiner, Art Unit 1794